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CHILD DEVELOPMENT

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INTRODUCTORY COMMENT

It was the suggestion of a sizable group within the membership of the Division on Childhood and Adolescence of the American Psychological Association that a symposium be presented at the 1949 meeting dealing with personality and social development. Consequently, the divisional Program Committee, Gertrude Hildreth serving as Chairman, arranged that the symposium presented herewith be sponsored by the Division.

Naturally, no suggestion was made to the participants regarding content, but each was given the general title, "Psychosocial Aspects of Child Development" to treat as he would.

T. W. Richards

PSYCHOSOCIAL ASPECTS IN CHILD DEVELOPMENT

A symposium presented at the Denver Meeting of the American Psychological Association, September 9, 1949

Psychosocial Development of Personality

Boyd McCandless, *The Ohio State University*

Psychological Ecology and the Problem of Psychosocial Development

Roger G. Barker and Herbert F. Wright, *University of Kansas*

The Role of Ecological Factors in Emotional Development in Infancy

Rene A. Spitz, *New York, New York*

A Commentary upon Some Recent Changes in Child Rearing Practices

Sybille Escalona, *The Menninger Foundation*

Chairman

T. W. Richards

Northwestern University

PSYCHOSOCIAL DEVELOPMENT OF PERSONALITY[1]

BOYD MCCANDLESS
The Ohio State University

When one speaks of the psychosocial development of the child or of the adult, two areas of behavior and theory are brought to mind. The first is that great, amorphous, controversial area known as "personality"; the second is the conflict-ridden area of research and ideology subsumed under "intelligence." Intelligence, so called, shall be considered as one of the manifestations of personality. In so doing many questions are begged, but it seems that justifications for such a grouping can certainly be made.

The purpose of this section of the symposium is to present a plan for ordering data in this whole field of psychosocial development. The material in the field is so heterogeneous and often so loosely defined that an attempt so to order the data is useful and necessary. Both clinically and theoretically, personality data seem to fall into a logical three-level classification.

The first level may be thought of as the most obvious. It might be called the personality layer of "available behavior." The easily observed phenomena of behavior lie there—miscellaneous-appearing, confused, often contradictory. The area is made up of the contents of behavior. There can be placed such phenomena as wishes, ambitions, interests, daydreams, fantasies, sociometric preferences, etc. Evaluations of such available behavior are made in the testing world from such instruments as the TAT, the Picture Frustration Test (both of course may be used to form constructs and/or to describe a deeper layer of behavior); the content of the Rorschach, the Binet or the Wechsler-Bellevue. Such available behavior is also describable in terms of sentence completion tests, play techniques—standardized or otherwise—sociometric charts or interest inventories, as well as anecdotal observations, free observations of behavior and many others. This first level of personality is actually made up of the data out of which "theories" of personality are built.

Second is a level which may be named the "behavior tendency" level. At the present stage of our knowledge it is made up of first order constructs or intervening variables which are not usually rigidly derived or logically related and which tend to be phrased in terms of a more or less oppositional set of adjectives designed to classify or to arrange on a continuum the "available behaviors" which constitute level one. Some personality theorists have made such classifications on a single continuum: e.g., Jung with his introversion-extroversion ordering of behavior; Moloney and many others

[1] Delivered at the Symposium on Psychosocial Aspects of Child Development, at the 57th Convention of the American Psychological Association, Denver, Colorado, September 9, 1949.

with an aggression-passivity continuum. The intellectual-emotional continuum of Rorschach is still another example.

Other theorists and constructors of tests have thought of this second level of personality as a multi-dimensional affair. It would seem that personality typologies such as the viscerotonic, somatotonic, cerebrotonic grouping of Sheldon are efforts to describe and classify available behavior at a behavior tendency level. Other examples are in terms of the use of psychiatric diagnostic categories: e.g., the hysteroid, epileptoid, schizoid, paranoid, etc. The psychoanalytic mode of speaking of personality in terms of levels of fixation is still another example: e.g., the oral or anal or phallic personality type.

There are many schemes for making such estimates of reaction tendency: objective tests such as the Humm-Wadsworth or MMPI exist. Aspects of projective techniques are designed to make similar inferences: e.g., the location-determinant-content-popular-original aspects of the Rorschach; the Picture Frustration Test has been so used; many schemes for the use of Wechsler-Bellevue signs have been advanced. From interviews and observations of behavior, inferences are made as to the character of behavior tendency.

Finally, there seems to be present in the literature still a third level. The constructs making up this third level are at a higher order level of generalization than are the first order constructs in level two. It might tentatively be called the "behavior characteristic" level. It, too, is made up of descriptive terms and so far few investigators have worked from this level to make predictions about available behavior. A behavior characteristic is implied by the use of such terms as: integrated versus unintegrated; or verbally oriented versus performance oriented. Actually a "behavior characteristic" serves as a limiter of the dimensions of behavior. Its constructs are usually thought of as characteristic modes of reaction and limitations within which personality typologies or behavior tendencies occur.

Also, behavior characteristics are apparently learned early, and after his first few years, present relatively stable, unmodifiable modes of reaction throughout the life of the individual. Judgment about them, even as with level two, is made from observations of available behavior or from standardized tests. Inferences about the nature of this third personality level, or behavior characteristic, are made from such data as intelligence test patterns, scores on stress resistance tests, F+ scores on a Rorschach, as well as from tests of "concentration, organization, perseverance, abstraction level," etc. Much of the reasoning in this whole area has been analogical. Tests such as the Wechsler-Bellevue, Binet, Arthur, Vigotsky Goldstein-Scheerer and many others, singly and together, have been used as data for inferring "behavior characteristics."

For the purposes of this paper, then, data and theories of personality are considered as classifiable at three levels: first and most observable is the level of so-called "available behavior"; second, inferential and constructual

in nature is the level of "behavior tendency"; third, also inferential and constructual, is the level of "behavior characteristic."

Next, it is our proposal that available behaviors, behavior tendencies and most probably behavior characteristics are learned phenomena. The laws of learning (insofar as we know and agree upon them) apply to the learning of personality just as fully as they apply to the learning of arithmetic, nonsense syllable lists or bicycle riding. Admittedly, we do not know much about the conditions of learning at any point in the learning sequence as far as personality learning at least is concerned.

Furthermore, with the single exception of psychoanalytic theory, nowhere in psychological literature does there appear a complete set of hypotheses about how personality is learned. Very legitimate questions have been raised about the adequacy of psychoanalytic theory as a legitimate scientific system (e.g., it is culturally bound, circular, its operations are not verifiable, etc.). Personally, and rather reluctantly, I share the doubts about its systematic and scientific tightness, although in no way would I wish to depreciate the contributions which have been made in the name of psychoanalytic theory and practice.

Eventually, I believe we can arrive at a system of denotation; and an integrated theory of personality which may bring together the dynamic nature of psychoanalytic theory and the testability and systematic rigor being tentatively approached in several of the learning theories. Before this can be done, however, many more data applicable to learning conditions in personality areas must be amassed and integrated.

To denote, predict or even describe behavior, the inadequacy of present applications of learning theory are evident, for instance, in consideration of the experiment of Mary Cover Jones (4) and the child, Peter, who first feared the rabbit and later, through reconditioning, learned to tolerate and even to love it. Peter had originally feared all order of furry objects, frogs, fish and mechanical toys. After prolonged association of a caged rabbit with the pleasant activity of eating, Peter lost his fear of the animal. In testing the degree to which he had lost other fears, it was found that he no longer feared fur coats, cotton or feathers; and took a much less dim view of white rats.

The experiment sounds clearcut and orderly. It fits neatly into most systems of learning theory. But consider the following questions which it leaves unanswered: Under precisely what conditions did exactly what original stimulus produce fear? What were the laws of stimulus gradient to account for the response transferring so far afield, for instance, as to feathers? What was the role, and what was the nature of the secondary reinforcement for this spread of fear (and the later reduction of the fear gradient)? Did the reversal of the stimulus gradient follow the same order as did its original spread, and if not, why not? What was the dynamic of the loss of fear of the rabbit: was it experimental extinction? Was it the learning of incompatible responses (e.g., eating) in the presence of the

rabbit so that the response of fear could not occur? What were the roles of symbolic stimuli and responses (e.g., words)? Was the original fear learned as a consequence of direct trauma or was it "contagion" from the fear of a sib, playmate, nurse, or parent?

An adequate theory of personality learning would answer such questions. No existing system of learning seems able to do so. Present systems are convenient and plausible ways of describing, but they do not tell us why Child A, leaped on for instance by a dog, goes merrily on his way, while Child B develops a long enduring and highly generalized fear, or to what objects and situation Child B is going to generalize this fear.

In terms of our preceding discussion, the behavior of Child B in this situation may be inquired about in some such terms as these:

1. What is the available behavior? *Answer:* It is, at least in the case of Child B, retreat, dependency on adults, crying or other.
2. From what behavior tendency does this available behavior arise? *Answer:* Probably from the "submissive" end of a dominance-submission continuum; or the introversive end of an introvert-extrovert continuum. In any event, it is undoubtedly correlated with other behaviors of the child.
3. What behavior characteristic lies behind this introverted and fearful behavior? *Answer:* The instability end of a stability-instability continuum; or possibly a personality shaped more by verbal than by performance modes of adjustment; or a characteristic of unintegratedness.

The preceding discussion suggests, perhaps, that present learning systems do not adequately account for a situation even so isolated as a child's specific fear. In terms of the broader aspects of child behavior with which we deal, personality systems, be they learning, psychoanalysis, or Gestalt, help us to predict even less adequately about such things as: Why does Johnny have his head set on being a doctor? Why is Mary an over-achiever in school, and an isolate in her play-group? As clinicians and people interested in child development, we often make successful predictions, rearrange environments, etc., satisfactorily. However, we tend to do so in terms of our own private experience and insights rather than in terms of integrated systems of personality theory. Yet many of us have at hand experimental data from which the beginnings of an integrated system of personality learning theory can be developed. For example, a few experiments, or related bodies of data further illustrating the notion of personality levels may be mentioned.

Hagman (3), investigating fears of preschool children, found a correlation of child-mother fears of .667. He felt that children learned to fear certain situations or things by observing their mothers' fears of similar things or situations.

Here are data with reference to the available behavior level. The data are that fears are present. An empirical relatedness is demonstrated (i.e., to mothers' fears). There is a posited set of learning conditions (e.g., the mother was both the stimulus and presumably the reinforcer of the response). A degree of predictability is given. Knowing the child's fears, a low accuracy judgment can be made about mamma and *vice versa*. There is not given, however (and there is no particular reason why Hagman should have produced), any evidence to relate fears to any other aspect of either child or mamma, or of their relationship. We do not know whether the children who patterned strongly after mamma were stable or unstable, introverts or extroverts, performance or verbal skewed or anything else. Before we can do anything very incisive about either these children or their mothers, we need to know much more about the "determiners" or correlates of their fears, the parent-child relationship, the learning conditions applicable to the group which sometimes produced parent-child similarity and sometimes did not.

Child development literature is full of similar studies, of a high degree of excellence in and of themselves, but fractionated and unrelated.

Baldwin (1) supplies a high level piece of research bearing upon the behavior tendency level. Work of the Fels researchers has shown that many areas of child behavior are correlated one with the other (a concept by no means new, of course). Working with data for 67 four-year-olds and their families, Baldwin was able to describe along fairly simple and clearcut dimensions the effects of certain learning conditions supplied by the parents on certain behavior tendencies of the children. Ranging his homes on a democracy continuum, holding the factor of "control" of children constant, he found that democratic handling moves his group of children statistically significantly in the direction of increased activity level, aggressiveness, fearlessness, and planfulness; that such children are likely to be nursery school leaders but (at nearly statistically significant levels) are likely to be more cruel than the average child of the same age, as well as more curious, nonconforming and disobedient. Without straining credulity too heavily, all of these behaviors could be lumped together and placed high on a continuum of agression-passivity.

Conversely homes high in child control, with the factor of democracy held constant, produce children relatively unquarrelsome, negative and disobedient; also they are less aggressive, planful, tenacious and fearless. Such behavior might be subsumed under a tendency placed far towards the passivity end of an aggression-passivity continuum.

From such research, we get broader predictability. Satisfactory delineation of behavior tendency helps us to predict and control a wide series of so-called available behaviors. One piece of available behavior relates to another; higher order generalizations can be rigorously drawn; new deductions and predictions made. Needless to say, prediction even in the Fels study is still at a group rather than an individual level.

Finally, to mention research applicable tentatively to the third or behavior characteristic level, we might mention the broad field of data referring intellectual patterns to social class. In general, as we move up the socio-economic-educational scale, we get differing types of intellectual functioning (as well as different average IQ's). At the so-called lower end, among the *hoi poloi,* performance IQ's tend to be higher than verbal IQ's. At the so-called higher end, verbal IQ's tend to be higher than performance IQ's. There are certain statistical explanations of this; the standardization of the tests is in part responsible; but the conclusion seems unmistakable that, related to social class (learning opportunities seems a more appropriate term) is a whole broad and fundamental method of approaching the world. This method is stable, and seems to have been learned by the pre-school years. It is a behavior characteristic, or second-level generalization. The "highbrow" approaches the world verbally and abstractly; the lowbrow in a performance skewed fashion and relatively concretely. The implications of such a conclusion for educational, economic, vocational and social reform purposes are rather shattering.

More specifically, working with "lowbrows" (boy parolees from the Wayne County Training School, an institution for pre-delinquent, high grade mentally defective children) Bijou (2) found that behavior characteristics, defined on a verbal-performance intelligence continuum, differentiate strikingly between members of an otherwise reasonably homogeneous group. Where vocabulary quotients and Binet IQ's of the parolees were matched, those with the higher performance IQ's (derived from the Pintner Patterson test) succeeded best in the community. There were statistically significant differences. In other words, at a low general intelligence level, if one is a boy paroled from WCTS, one tends to do better in the world the more he approaches it from a performance and reality-skewed angle.

Wellman and McCandless (5) present relevant data for a group of preschool children (enrolled in the University of Iowa demonstration preschools). They found that verbally-skewed youngsters tended to increase their total measured IQ on the next testing round, where relatively performance-skewed ones stayed about the same or dropped. Here again statistical significance was found for the difference between groups.

These two studies specifically, and the broad sample of research on social class and intelligence throw some fascinating if flickering lights on the subject of prediction, which is still broader, namely, prediction from a behavior characteristic level.

The attempt here has been to present a system, illustrated by research examples, for ordering the data amassed in personality research. Such ordering seems imperative for clarity of thought. It suggests the need for much work in the rigorous scientific development of some system or theory of learning (this being potentially the most operational since it offers the greatest possibility for logically integrated research). Personality behavior has been classified at three levels: the empirical level, or *available behavior* level; the first order construct level, or *behavior tendency;* and the second

order construct level, or *behavior characteristic,* which serves to set the limits for development of the first two levels. Many of the data ordinarily subsumed under intelligence, of which the research findings cited are only a few examples, seem most meaningful as limits imposed on personality. They are limits learned early in life. They constitute remarkably stable and permanent dimensions of personality, yet are still culturally determined.

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PSYCHOLOGICAL ECOLOGY AND THE PROBLEM OF PSYCHOSOCIAL DEVELOPMENT

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Psychosocial development occurs as the person behaves in life situations. One method of studying the person-situation-behavior variables that are relevant to psychosocial development is the straightforward one of describing the behavior of persons in naturally occurring situations. Non-experimental investigation of this kind has been productive in astronomy and the earth and biological sciences. The literatures of these sciences record many practical and theoretical achievements that are based upon naturalistic description. In the literature of biology, for example, there are many detailed, concrete descriptions of the conditions of life and the structural and functional adaptations thereto of plants and animals. Descriptive ecology is an important part of biology and an important source of both practical information and scientific knowledge.

Psychology early became experimental; it has accomplished little toward the development of field-study methods. There are few scientific records that tell of a human mother caring for her young. There are few descriptions that give an account of how a particular teacher behaved in a classroom and of how the children reacted. We do not know with scientific accuracy what the members of some one family actually did and said during a meal. We cannot find a detailed history of any child from the time he awoke one morning until he went to sleep that night. Ecology is scarcely a recognized branch of psychology.

The near absence of ecological techniques and data in psychology precludes the investigation of certain problems having an important bearing upon psychosocial development, and because of this deficiency the study of other problems is greatly retarded. It is important, therefore, that the meaning of ecology and its place in psychology be made explicit.

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[1] This paper is an expansion of one given at the Denver symposium by one of the authors. The paper has been prepared by the authors named, but it represents the thinking of the whole staff of the Midwest Child Study Project. The staff includes the authors and Phil Schoggen, Jack Nall, Louise Barker, Lorene Wright, Beverly Fox, Lucille Johnson, Maxine Schoggen, Irene Nall and Mariana Remple. This project is being supported by a research grant from the Division of Research Grants and Fellowships of the National Institute of Health, U.S. Public Health Service, and by the University of Kansas. We are greatly indebted to the people of Midwest for their understanding and help.

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Psychological Ecology

The Greek root of the word ecology means *home* or *homeland*. For biologists, the study of ecology is concerned with the naturally occurring biological homelands or *habitats* of plants and animals—particularly with the relations between habitat and function, population characteristics, and structural change.

If we take the terms *ecology* and *habitat* into psychology and follow biological usage, the first question is this: What is the homeland, the habitat of behavior? It is right here that a disagreement has already arisen in the use of these terms. One homeland of behavior is the world as it exists for the person and as it affects behavior, the psychological situation or life-space. The other homeland of behavior is the impersonal world which does not affect behavior directly, yet both limits the psychological world and contributes to its content. This other homeland of behavior is the world of physical and geographical conditions, of social groupings and interactions, of economic and political processes, of institutions, of prevailing ideological patterns; it is the *non-psychological milieu* which surrounds the psychological world and from which in part psychological habitats are made.

Lewin (3) has used the term *psychological ecology* to refer to the relations between these two realms, the psychological and the non-psychological worlds. In a study of food habits, for example, he points out how the psychological determiners of this behavior are directly influenced by economic, agricultural, geographic and other non-psychological conditions. The problem of establishing the connections between non-psychological facts and psychological situations or habitats Lewin calls the ecological problem.

Brunswick (1) uses the term ecology to denote the body of problems concerned with the description of the psychological world and its relation to behavior. Ecological variables for Brunswick are the *perceived* size and distance of objects, not their *measured* size and distance; or the *judged* intelligence and political conservatism of persons, not their *measured* intelligence and conservatism.

Both Lewin and Brunswick agree in using ecology and habitat to refer to *naturally occurring,* non-experimental situations. There are good reasons for continuing this usage and for giving the term *ecology* in psychology a very general referent, namely: the study of behavior in naturally occurring situations. This marks off psychological ecology from experimental psychology, with the latter defined as the study of behavior in artificially arranged situations, whether these include brass instruments or devices like projective tests and questionnaires.

Following Brunswick and Lewin further, we can distinguish two ecological problems and two corresponding terms to identify them.

First, there is the problem of the *non-psychological milieu,* of the material-cultural world in which the person is immersed, and of the way it is transformed into a psychological world or habitat.

There is the further problem of the *psychological habitat,* of the naturally occurring psychological world, one that depends partly upon the non-psychological milieu and partly upon the motives and abilities of the person. The requirement here is to describe existing habitats and to show how they are related to behavior.

Both of these problems are of fundamental significance for psychosocial development.

Psychological Habitat

We have good techniques for describing and measuring behavior, but inferior means of describing and measuring psychological habitat. One of the first needs here has been the need for more adequate concepts. In the absence of such concepts we resort to short-hand ways of denoting different habitats, generally in non-psychological terms, as when we point to the "situation" of the "only child," the "lower class child," the "Negro child," the "urban child," the "institutionalized child." It is true that biologists, too, use non-biological terms to designate animal and plant habitats, as when they refer to the Alpine, Hudson, and Sonoron zones. Biologists, however, know a great deal about the biological complexes, the manifolds of temperature, precipitation, soil conditions, and the like, which these terms designate. But psychologists often have only the vaguest understanding of the psychological conditions named by their habitat terms.

When the needed information becomes available and we have psychological habitat maps, as we now have biological habitat maps, a number of approaches to the study of psychosocial development will become easier. Important possibilities here include the following.

1) *Comparative studies of habitat and behavior at different times and places.* One cannot investigate the changes which have occurred during the last century in the rearing and behavior of children. No scientific records have been kept. The best one can do is to call upon the writings of novelists, diarists, letter writers and news reporters, and from them reconstruct in some degree the conditions of the past. This is almost as true for intercultural and subcultural research.[2] There are few descriptions of the conditions of life and behavior of particular individuals in different cultures which are suitable for psychological analysis. It is virtually impossible, moreover, for an investigator to cover the ground of available studies from the original data collection through the stages of analysis and interpretation.

2) *Studies of acculturation and personality formation.* Acculturation occurs and personality is formed through the interaction of psychological habitat and behavior as they occur in life situations. The tasks of the stu-

[2] The work of sociologists and ethnologists deals largely with the generalized habitats and behavior of the people of a culture or subculture. We are concerned, here, with the habitats and behavior of particular individuals.

dent of acculturation and personality are to formulate the general laws by which psychological habitat is related to acculturation and personality formation, and also to discover and describe existing psychological habitats. The whole problem is one that cannot be met in laboratories or clinics; it requires first-hand descriptions of behavior and conditions as they occur in real life. At the present time we have little scientific information on this matter. We know much about what children do in the laboratory, under experimentally induced frustration and conflict, for example; and we know much about what children do in the situations created by psychological tests. But we know little about the content, order, and patterning of the situations which actually exist for children in their daily lives; nor do we know how children react to these situations. We know a great deal about how children are *able* to behave, but we know little about how they *do* behave because we have not studied what they do in their psychological habitats.

3) *Theoretical studies.* The lack of naturalistic records of behavior has retarded systematic, theoretical studies. It is well known that important theoretical achievements have been made in such non-experimental sciences as astronomy, geology, and meteorology. It would be unfortunate if psychology should neglect at this stage in its development the naturalistic approach to problems of explanation, for psychology is at present much better equipped than formerly to handle naturalistic data on an adequate conceptual level. The central task of theoretical psychology is to formulate the general laws governing the simultaneous and sequential interdependencies of behavior and situation. Methods of recording the simultaneous and successive behavior manifolds in naturally occurring situations are essential to progress in this difficult task. For one thing, it is impossible to create experimentally some conditions that occur in life situations. No laboratory can duplicate the frequency of repetition, duration, intensity or complexity of psychological situations and behavior that are common outside the laboratory. Further, a great variety of psychological habitats occur in every community, so that it is possible to test hypotheses by comparing the behavior of persons in different habitats. The proposed procedures are similar to well established public health methods in which health and growth are studied in relation to naturally occurring nutritional and sanitary conditions.

Non-Psychological Milieu

We turn to the other main problem of psychological ecology, the relation between psychological habitat and the non-psychological milieu. How and in what degree does the material-cultural world affect psychological habitat?

Through studies in Midwest, U. S. A., we have found that this com-

munity, like every other, provides for its children a limited number of psychological habitats, just as a geographical area provides a limited number of plant and animal habitats. How does this come about? In a considerable degree through manipulation of the non-psychological milieu. It is common to say that the world of the child, his habitat, arises through learning. Our studies already suggest, however, that habitats are created or destroyed in a much more direct and immediate way, i.e., through manipulation of the non-psychological milieu. For example, the children of Midwest have few regularly recurring habitats which mean to them, "this is a time and place to have a good time with grown-ups' help." There are few adult-created recreational groups—no hobby clubs, no dancing classes, no purely social organizations for children or adolescents. Adult-sponsored children's activities are chiefly cultural and educational, with sheer recreation as an adjunct, e.g., the programs of the 4-H Club, the Sunday schools, and the Scouts. The scarcity of purely social-recreational habitats for children in Midwest is not a consequence of learning by the children that they are "bad" and therefore to be avoided; this is, in fact, not true. Their scarcity is an outcome of the fact that the community does not provide the milieu so that many regularly recurring habitats of this kind can exist for its children. The town uses its resources for the psychosocial development of children more in other ways.

Methods of Psychological Ecology

In the space available, it is possible to consider briefly only two methodological problems of psychological ecology, both of them concerned with behavior and psychological habitat. We refer to (1) methods of sampling, and (2) methods of recording.[3]

Sampling Behavior and Psychological Habitat. The primary data of a study in psychological ecology are behavior-habitat units. One of the first findings of the Midwest research was that great numbers of such units occur in even a small community. Midwest has a total population of 700, of which 109 are children below the age of 12 years. Our records indicate that, considering only the children, there occur in Midwest 75,000 to 100,000 differentiable behavior-habitat units, or *episodes,* each day. It is clear that means have to be found for sampling so great a mass of material.

Two kinds of sampling guides are available. First, there are stable, non-psychological characteristics of individuals that are known to be correlated with behavior. These include sex, age and social class. Factors associated

[3] Other problems of method that cannot be considered here are 1) methods of identifying and describing the non-psychological milieu, 2) methods of defining and identifying valid units of behavior and habitat, 3) methods of describing behavior and habitat in valid conceptual terms. These problems will be considered in subsequent papers.

with variations in these characteristics influence behavior in more or less characteristic ways. Secondly, there are stable, non-psychological situations of the community which are known to be correlated with behavior, e.g., the situations provided by the Sunday school, the day school, a basketball game, the drug store. Such community situations coerce the children who enter them to behave in relatively homogeneous ways regardless of the individual characteristics of the children. The behavior of children in Sunday school will be quite different from the behavior of the same children in day school, in the drug store, or at the basketball game. Every community provides a number of such situations; we may call these the *behavior settings* of the community.

The student of behavioral ecology is in a position to make a two-way stratified sampling of behavior-habitat units if he has available a census of the individuals of the community with their age, sex, and social class, and a map of the behavior settings of the community. It is necessary to consider further here the variables of age, sex and social class; however, behavior settings require additional discussion.

The behavior settings of a community form a link between the non-psychological milieu of a child and his psychological habitat. Every behavior setting contains non-psychological forces which compel the child to develop a psychological habitat that is in some degree appropriate to or isomorphic with it. A behavior setting may be defined as a physical or social part of the non-psychological world that is generally perceived as appropriate for particular kinds of behavior. The behavior settings of a community are the limited number of physical-social regions which are selected from the infinite number that could be discriminated and which are perceived as possessing appropriateness as centers for particular kinds of behavior.

A behavior setting is denoted both by its objective physical-social characteristics and by its perceived behavioral possibilities. Thus, the behavior setting, "chair," has both certain physical properties (including shape and size) and perceived behavior appropriateness (a place to sit). A person may in this case engage in the appropriate behavior in the absence of a chair. He may sit on a stone; but this does not make the stone a "chair" for the person, if his perceptions are normal. An object with the physical properties of a chair which, as in some oriental cultures, is not perceived as being appropriate for the behavior of sitting is not a "chair."

Similarly, a social behavior setting requires both a certain social arrangement and a particular perception of its behavior appropriateness. Thus, the behavior setting, "birthday party," must include both an objective social arrangement (invitations, guests, refreshments) and characteristics of the situation which are perceived as appropriate for "party" behavior (gifts,

congratulations, games). Either, alone, does not make a birthday party.

The behavior settings of a community are partly created by the people, as in the instances of streets, churches, and policemen. In part, too, they are selected from the infinite number of conditions and states of affairs, such as bathing beaches, quarries, and social classes, that make up nature and society. The behavior setting has the same place in the psychology of action as a color chart in the psychology of perception. To be "red" on the color chart an area must have a certain physical wave length of reflected light *plus* the perception of it by most people as "red." If either of these dimensions of the area should change, the color would not be "red."

Some physically discriminable parts of the environment are not behavior settings because they are not generally perceived as being appropriate for behavior of any kind. Thus, an abandoned railroad grade near Midwest is not a behavior setting. It is not seen as appropriate for any activity: not for gardening or farming (poor soil and topography); not for sliding (banks too short); not for hiking (it goes nowhere); not for picnicking (no shade).

Again, the behavior setting stands midway between the non-psychological milieu and the psychological habitat. It is a part of the non-psychological world that is generally perceived as having some particular behavior appropriateness. The behavior setting is not a part of the non-psychological milieu as such, nor a part of the milieu which has been transformed into psychological habitat for a particular individual; it is a part of the milieu as it is generally perceived.[4]

In practice, behavior settings can be discovered by listing the distinguishable physical and social features of a community, and by asking the inhabitants, "What is the appropriate thing to do here?" This question may be asked directly of informants or it may be asked and answered implicitly by observing the characteristic behavior of people in different physical and social regions of the community.

Examples of behavior settings for the children of Midwest are given below. They have been identified upon the basis of information secured from informants, reports in the Midwest Weekly, and field observations. The breadth of the categories has been determined by the requirements of our research; for some problems, considerably more detail would be required. The psychosocial development of the children of Midwest takes place within such settings as these. The complete inventory of behavior settings serves as a guide for sampling the psychological habitat and behavior that occur in the community.

[4] Sociologists and ethnologists are concerned with this problem on a culture-wide basis.

Examples of Child Behavior Settings in Midwest

Physical-Social Milieu	*Behavior Appropriateness for Grade-School Child*
Own home, 6:00-8:00 a.m.; parents call, child undressed, clothes available, bathroom facilities available.	"Getting up and getting dressed."
Own home, indoors; no specific coercions operating.	Wide variety of quiet, non-destructive "proper" activities (playing, reading, listening to radio, etc.).
School classroom, "study period."	Sitting, quiet shifting of position, writing, reading to self, thinking, day dreaming, quiet talking with neighbors about lessons, walking about with permission.
School halls and cloakrooms, before school and between classes.	Restrained talking, laughing, joking; walking about freely; eating candy.
Drug store.	Purchasing and eating candy, soft drinks, ice cream; purchasing and/or reading comic magazines; meeting and conversing with friends; mild hilarity.
Sunday school, opening exercises.	Sitting still, listening, group singing.
Women's Club.	Helping mother serve, quiet sitting and listening, performing (speaking piece, singing).
Streets (except those around courthouse square).	Walking, running, riding horse or bicycle, playing ball.
Hardware store.	Examining and buying goods for sale, securing information about the operation of tools and machines, watching mechanics, playing in small groups among refrigerators, etc.
Movie.	Eating popcorn, meeting friends, watching show.
Tavern.	Looking in.

Recording Psychological Habitat and Behavior. Scientific descriptions by psychologists of human behavior in naturally occurring situations have used four general methods, which are represented by 1) *specimen records,* sometimes called "diary records," "narrative accounts" or "anecdotal records"; 2) *time sample records;* 3) *surveys and tabulations;* 4) *case studies and biographies.* Each method has advantages for ecological studies. It is not possible to consider all of the methods here. We should like, though, to indicate the place of specimen records in ecological research.

In their original form, specimen records were simple narrative descriptions of behavior. Examples are given below:

> *Preyer* (4): On the 26th day... He started suddenly when a dish that he could not see was noisily covered near him. He is frightened, then, already at unexpected loud noises, as adults are. On the thirtieth day this fright was still more strongly manifested. I was standing before the child as he lay quiet, and being called, I said aloud, "Ja." Directly the child threw both arms high up quickly and made a convulsive start with the upper part of his body, while at the same time his expression, which had been one of contentment, became very serious.

> *Isaacs* (2): Phineas (3:10) went to look at his garden and found the mauve crocus which he had planted last week; he showed it to Miss C. saying, "It's come out—that's because I made it some pudding." He wanted to plant more bulbs and went to the rubbish heap to look for more. There were two crocus open and he began to dig them up. The stems broke and they came up without the bulbs. Phineas said, "Are they broken?" and Lena told him, "Yes because there aren't any bulbs." ... Later Phineas "dug" one up complete with bulb and shouted, "There's the root ... That one will grow!" He planted it in his own plot.

Records of this kind have been severely criticized, and it is partly because of them that the term "anecdotal" has become one of opprobrium in psychology. The criticisms which have been mentioned most often are 1) biased selection of incidents, 2) unreliable reporting, 3) unwarranted interpretation, and 4) difficult recording and analysis. These criticisms are undoubtedly justified in many cases in which primitive specimen records have been used. However, the reading of such anecdotes, even in their early inadequate form, reveals advantages which have not often been pointed out. They give a multi-variable picture of the molar and molecular aspects of behavior and situation. They record in some measure the continuities of behavior. They present unanalyzed specimens of behavior and psychological situation. Other sciences have found it profitable to collect relatively intact, unanalyzed specimens of their phenomena for study, as in herbia, and in anatomical and geological museums. Psychology has no such collections of its raw material. If we want undissected records of how and under what conditions people actually behave we have to go to novelists, diarists and newsreporters.

There is some evidence of a new interest in the possiblities of such naturalistic records of behavior which will meet present-day requirements of reliability and validity. Despite the discouraging shortcomings of early anecdotal reports, there is reason to believe that such descriptive accounts can be greatly improved. Here is an excerpt from a record that we have made. It is taken from a continuous narrative record of a child's behavior from the time he awoke in the morning until he went to sleep at night. It extends from 7:20 a.m. till 9:15 p.m.

Roy is a seven-year-old boy. He lives in Midwest with his mother and father and two sisters (15 years and 13 years) and brother (12 years). The following sequence of behavior occurred in May, 1949. It took place after Roy had finished breakfast and before he left for school. Roy was dressing in his bedroom, which also serves as a hallway between the kitchen and the living room. He stood in his shorts beside his bed, where lay his clean jeans.

8:33 Roy took a pair of neatly pressed jeans off the bed and viewed them soberly.

He sat on the bed as he put his legs into the legs of the jeans. He was puffing with the effort of dressing, and probably because he had a cold, too.

One of the snaps on the fly wouldn't snap, though he tried hard, frowning impatiently.

He said, "Ounnnn," in protest and looked at me seriously for me to share this reaction to difficulty.

I said, "It's hard." He said, "Urrrr," softly in agreement.

With another stronger effort he succeeded in fastening the snap.

He showed no sign of satisfaction, however, as his attention quickly and eagerly turned to a belt on the bed. The belt seemed to be the important thing, but the jeans had had to go on first.

He straightened the belt, but was not ready to put it on.

8:34 He announced, "I'm going to take my belt," as though this were something very important.

Then he put on the belt. This completed the dressing.

Roy said proudly and with definiteness, "I'm going to take my gun, too."

He looked at me and said, "The gun is still under my pillow."

He then looked toward his pillow.

> His tones and glance suggested that there was prestige about sleeping with a gun under the pillow. However, there was no arrogance, just happiness.

He reached under the pillow.

To his evident surprise, he brought out a flashlight.

He said, "Ahhh, here's the flashlight. I didn't put it up yet." He laughed as though he had been quite inefficient, that he should have done that some time before.

He took the flashlight, and laid it carefully on a ledge of the nearby cupboard.

> *8:35* Lola, his fifteen-year-old sister, called pleasantly, but with responsibility, "Are you about ready to go to school, honey?"

As Lola came in, Roy got his gun and holster from under the pillow.

Lola went directly to Roy and turned his collar down.

She said, asserting her responsibility, but in a friendly voice, "Collars look better when they are turned down."

She kneeled and turned up Roy's jean legs so they wouldn't be too long.

She was quite motherly about this. Roy was absorbed with his gun and holster, paying little attention to his sister.

Then Lola noticed Roy's holster and gun and said, "You shouldn't wear that holster and the gun," in an authoritative tone.

He ignored her remark and quietly persisted in preparing to wear the gun. He was getting the holster placed just right on the belt.

Then he took off a chain that was on the holster.

He put the chain on the bed.

His sister said, "You can't wear it." Then as a more forceful approach, "Mother doesn't want you to wear it." She said this firmly and with agitation.

Roy showed no intention of heeding her. He adjusted the holster even more; then put the belt around him and began to fasten it.

8:36 His sister exclaimed quite loudly as she saw him actually put the belt on, "Roy, you take it off!"

Roy stood resolute and very quiet.

> This did not appear to be an ominous quietness perhaps to be followed by tears or tantrum. I think Roy had decided he didn't necessarily win by argument or pleading a cause, but that it is more prudent to act quietly, avoiding interference. It was a technique, it seemed, for coping with a sister who would try to prevent him from doing what he wanted to do. Lola did not show hostility during the argument. She meant to be firm because she was responsible for his dressing, but she did not show much agitation until she saw him actually putting the belt on.

She seemed finally to be almost ready to concede the point, and said, "Do you play guns at recess?"

He said, "Yes," emphatically and also defensively, looking straight ahead.

Vernon, (the twelve-year-old brother) who came in to hear the argument, said, knowingly and in firm contradiction, "Oh, no you don't." Lola said uncertainly and still trying to reckon with Roy, "Well, will it be warm enough today?"

I took it the argument was over and Roy had won.

The sister said, "I'll wash you." She started for the bathroom, expecting Roy to follow.

Records such as this, presenting as they do relatively complete accounts of behavior and psychological habitat as they naturally occur appear to be of great potential value for studies of psychosocial development. Their validity, reliability and practicability remain to be determined, although there is little question that they are adequate for many problems.

Through our work in making specimen records, we have learned a number of things which seem to be of methodological significance.

1. At the present time specimen records must be made by watching and verbally describing the behavior of the subject. Sound moving pictures or television may become technically feasible in the future, although the difficulties appear to be very great.

2. Records covering relatively long sequences of behavior are advantageous. In the first place, the danger of biased selection of behavior incidents is reduced as the length of the sequence is increased. We find that a record covering the behavior of a child through an entire day contains 750 to 1000 behavior-habitat units or episodes. A long rather than a short sequence of behavior is, therefore, roughly equivalent to a large rather than a small population sample. In the second place, the danger of false interpretation of the meaning of an episode of behavior is reduced when it occurs in a wide context. In the third place, behavior is extended in time, and its sequential arrangements are as significant as its other features; continuity as an aspect of behavior is lost if single episodes, or short sequences are recorded.

3. Specimen records should include descriptions of both the directly perceived, manifest behavior—the vocalizations, the limb movements, the locomotions—and the observer's immediate inferences of the motivations and feelings of the subject. One who is concerned about the objectivity of such records must face the fact that he has to deal with the direction, the goals and the meaning of behavior when he studies psychosocial development, and that these can never be perceived directly. By recording long sequences of both directly observed and inferred behavior the best basis for constructing a final "true" record is laid. Observation is always selective, but it is more or less so, and it can be guided by broad or narrow purposes. One aim in training observers to make specimen records is to reduce the bias and increase the breadth of the report.

4. A specimen record should describe the situation in which the behavior occurs as well as the behavior itself. Behavior divorced from its psychological context is largely meaningless, and much of the value of specimen records lies in the possibility of studying the relations between situation and behavior.

5. In making specimen records the influence of the observer must be kept minimal and constant. The observer is almost always a part of the subject's psychological situation and hence influences his behavior in some degree. This is an inevitable limitation of most naturalistic observations. An important part of the training of observers lies in techniques of minimizing and holding constant the involvement of the observer in the subject's behavior.

6. The optimal length of an observation period is small. The alertness required to perceive and remember the multitude of simultaneous and sequential occurrences is fatiguing. Notes taken on the spot help, and they are a part of our procedure. We have found, however, that even wher extensive notes are taken, an observer's efficiency rapidly declines after 30 minutes of observation. This means that long, continuous, specimen records require a team of observers. For a full-day record at least six observers are needed, with eight or nine desirable.

7. Observations should be recorded by dictation immediately after they have been made. It is probable that when the intention is to make ratings and general summaries of behavior and situation, a period of time to provide for perspective and insight is advantageous. But when emphasis is placed upon the concrete details, as in specimen records, immediate recording is essential.

8. We have found it valuable to provide an interrogator who listens to the original dictation of observations, and questions the observer on unclear points after he has finished. This allows for both spontaneity in the original report and for its subsequent correction and completion. It usually requires at least an hour to record a half-hour observation; frequently a longer time. With a team of eight or nine observers a schedule can be arranged whereby each observer serves also as interrogator. Interrogation benefits both the observer's record and the interrogator's subsequent observations.

9. The typescript of the original report and interrogations can conveniently be stapled in sequence to wide continuous strips of paper for editing by the original observer. The editing includes correcting, simplifying and welding the report and the interrogation into a final sequential description. In our work, the observer is always interrogated further in this stage of the procedure.

This process yields a record of the sort exemplified by the excerpt given above. It provides a specimen of raw behavior data which can be used for a number of purposes and which appears to be of particular value for studies of psychosocial development. The specific uses depend upon the methods which can be devised for analyzing and conceptualizing the descriptive content of the records. This problem, together with the problems of reliability and validity, will be considered in forthcoming publications.

Psychological ecology can make important contributions to an understanding of psychosocial development. These contributions await the further development of methods of studying behavior in naturally occurring situations.

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THE ROLE OF ECOLOGICAL FACTORS IN EMOTIONAL DEVELOPMENT IN INFANCY[1]

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In the following an extremely condensed report on our findings on psychosocial factors in infant development will be presented. To call attention to the function of such factors in infancy appears to us an urgent need, for it is not generally appreciated that at this age influences of a psychosocial nature are more startling in their consequences for development than at any other period of childhood in later life.

The reasons for this are manifold. At no later period is the development so rapid, so turbulent and so conspicuous. It involves, more obviously than at any later period, the somatic as well as the psychological aspects. Any variation in the development will be manifested in both these sectors, with the result, as will be shown further on, that such variations caused by psychosocial factors can literally become matters of life and death.

In a certain sense development at this age is facilitated by certain peculiarities which infancy does not share with later stages. In infancy development takes place from a quasi-animal level to the human level. This involves the problems of adaptation and communication which arise toward the end of the first year of life. Any anomaly in the solution of these problems will be particularly conspicuous.

Another peculiarity of infancy is that in it environment, in the widest sense of the word, is extraordinarily restricted. The radius of the infant's physical environment is extremely narrow. The social environment in the life of the normal infant is restricted practically to one single person: the infant's mother. This concentration of the infant's habitat and of its social contacts permits the investigator exceedingly close insight into the psychosocial factors operative in the infant's life.

A further facilitation in the study of our problem is offered by another peculiarity of infant life. The single infant can be studied in its family and also in large groups, in institutions. Nevertheless our proposition that the infant's environment is restricted to one person, the mother or her substi-

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We use the term "ecological" in the sense of McKenzie: "The study of the special aspects of the symbiotic relations of human beings and human institutions" (McKenzie, R. D.: Encyclopedia of the Social Sciences, Vol. V, p. 314, New York, 1931). Such symbiotic relations between the individual and its environment include economical forces, historical traditions, cultural institutions, changing mores and even certain aspects of a geophysical nature. Psychosocial factors form one aspect of ecology. Nevertheless the two terms will be used more or less interchangeably in this article.

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tute, remains substantially unchanged (unless the institution in question should entrust the care of the infants to a number of different persons). For during the largest part of the first year of life no interaction takes place between one infant and the others, such as would be the case between the inmates of institutions at later ages. This makes it possible to study infants of different races and of different hereditary endowment under identical environmental conditions, keeping a large number of variables constant.

These premises determined 14 years ago the beginnings of our research into the problems of emotional development in infancy. Relatively little work had been done at that time in regard to the development of emotions as such or in regard to the influence of emotions on development. The pioneer findings were those made by Bridges (1, 2, 3).

A few brief statements will clarify our position on the question of emotional development as observed in the course of our work.

Emotions are not present ready-made from birth. Like any other sector of the human personality they have to develop.

We usually conceive of emotions as paired: friendliness and anger, love and hate, pleasure and displeasure, gay and sad, are the terms in which we think of emotions. But at birth the first emotion visible is a state of diffuse excitation in the nature of displeasure and no pleasurable emotion is observable as its counterpart, only a state of quiescence. A variety of emotions develops from this beginning in the further course of the first year of life. We have been able to correlate the progressive development of specific emotions to definite age levels.

Two distinct emotional responses are differentiated in the course of the first two months of life. They appear to correspond to pleasure and displeasure, and they seem to appear in reaction to physical stimulation.

A response to psychological stimulation seems to present itself for the first time in the third month, when the infant smiles in response to a human partner's face (9).

Somewhat later displeasure also is manifested in response not only to physical, but also to psychological stimulation. It can be observed in the reaction of the infant to being left alone when its human partner goes away.

After the sixth month negative emotions take the lead. Anxiety is differentiated from the displeasure reaction. We assume that a minimum of ego development is the prerequisite for the development of anxiety and find ourselves in agreement on this point with E. Hilgard (6).

In the following two months possessive emotions toward toys are manifested. Jealousy appears in the ninth and tenth months; between the tenth and twelfth months disappointment, anger, love, sympathy, friendliness, enjoyment and a positive sense of property become observable. The age levels mentioned should not be considered as definite limits. They designate approximate ages at which these emotions appear and may vary widely both according to individuals and circumstances.

The significant part of this emotional development is that during the whole of the first year emotional discrimination is manifested approximately two months earlier than any other form of perception. The three months smiling response, which is the infant's smiling recognition of the human partner's face, appears at an age at which no other object is recognized. Even food, the most familiar object in the baby's life, is recognized only more than two months later. The displeasure which the infant manifests at four months when left by its partner, appears two months earlier than the displeasure shown by the child when its toy is taken away. The eight months anxiety shown by the child when confronted with strangers is a sign that it has achieved the capacity to discriminate between friend and stranger. This appears two months earlier than the child's capacity to differentiate toys and other objects from each other. Thus emotional development acts as the trailbreaker for all other perceptive development during infancy.

These are the main stations of emotional development which we were able to locate in the course of the first year of life. For the purposes of our other investigations they served as points of orientation. These points of orientation we combined with the well-known findings on physical and mental development, investigated in such excellent detail by Gesell, Buehler, McGraw, Goodenough, Thompson, Pratt, Shirley and many others. We applied the combination of these two viewpoints for the purpose of comparing infants raised under different ecological circumstances.

A brief summary of the first such investigation made by us may serve as an illustration for the other ones of which only the results will be given.

The investigation in question (7, 8) was carried out in two institutions which we had the opportunity to observe simultaneously. Both institutions had certain similarities: the infants received adequate food, hygiene and asepsis were strictly enforced, the housing of the children was excellent, and medical care more than adequate. In both institutions the infants were admitted shortly after birth.

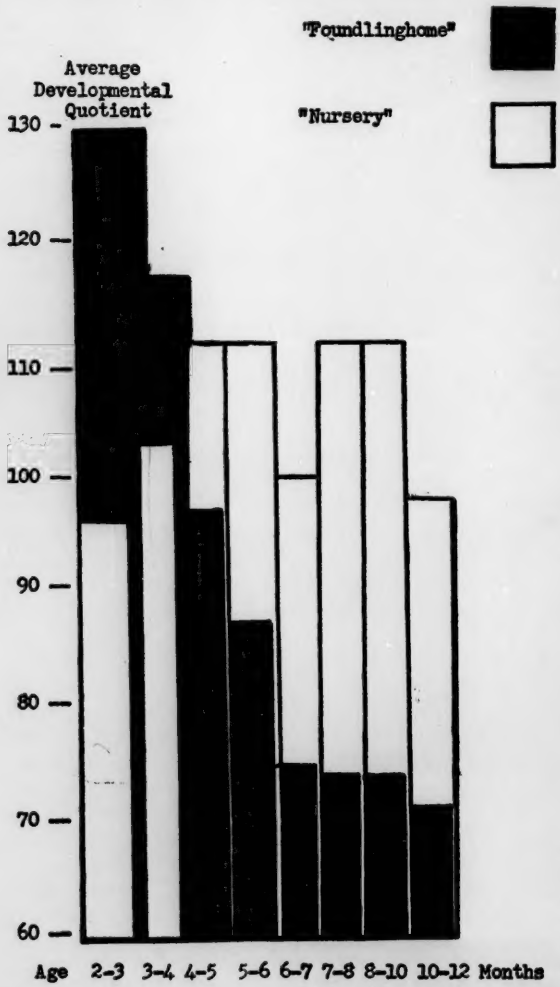
The institutions differed in one single factor. This factor was the amount of emotional interchange offered. In institution No. 1, which we have called "Nursery," the children were raised by their own mothers. In institution No. 2, which we have called "Foundlinghome," the children were raised from the third month by overworked nursing personnel: one nurse had to care for from eight to twelve children. Thus the available emotional interchange between child and mother formed the one independent variable in the comparison of the two groups.

The response to this variable showed itself in many different ways. Perhaps the most comprehensive index of this response is offered by the monthly averages of the developmental quotients of these children.

The developmental quotient (4, 5) represents the total of the development of six sectors of the personality: mastery of perception, of bodily functions, of social relations, of memory and imitation, of manipulative

FIGURE 1

COMPARISON OF DEVELOPMENT
IN
"NURSERY" AND "FOUNDLINGHOME"



ability and of intelligence. The monthly averages of the developmental quotients of the children in the two institutions over a period of twelve months are shown in Figure 1.

The contrast in the development of the children in the two institutions is striking. But this twelve months chart does not tell the whole story. The children in "Foundlinghome" continued their downward slide and by the end of the second year reached a developmental quotient of 45. We have here an impressive example of how the absence of one psychosocial factor, that of emotional interchange with the mother, results in a complete reversal of a developmental trend. This becomes still clearer in Figure 2.

It should be realized that the factor which was present in the first case, but eliminated in the second, is the pivot of all development in the first year. It is the mother-child relation. By choosing this factor as our independent variable we were able to observe its vital importance. While the children in "Nursery" developed into normal healthy toddlers, a two-year observation of "Foundlinghome" showed that the emotionally starved children never learned to speak, to walk, to feed themselves. With one or two exceptions in a total of 91 children, those who survived were human wrecks who behaved either in the manner of agitated or of apathetic idiots.

The most impressive evidence probably is a comparison of the mortality rates of the two institutions. "Nursery" in this respect has an outstanding record, far better than the average of the country. In a five years' observation period during which we observed a total of 239 children, each for one year or more, "Nursery" did not lose a single child through death. In "Foundlinghome" on the other hand, 37 per cent of the children died during a two years' observation period (Figure 2).

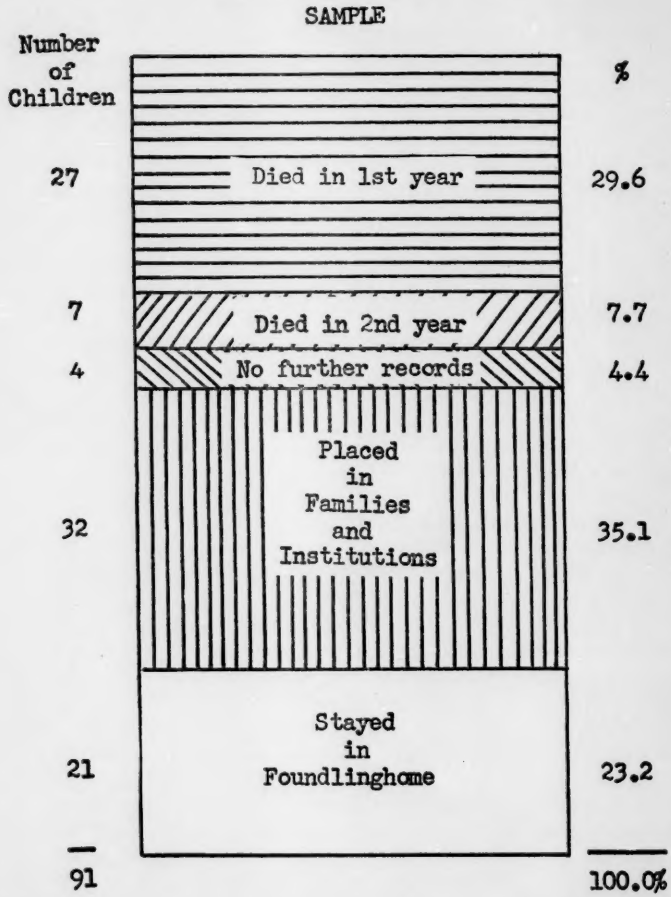
The high mortality is but the most extreme consequence of the general decline, both physical and psychological, which is shown by children completely starved of emotional interchange.

We have called this condition marasmus, from the picture it shows; or hospitalism according to its etiology. The ecological background of marasmus is the orphanage and the foundling home which were current in our country in the last century. This ecological background leads to the picture of a developmental arrest which progressively becomes a developmental regression. Its earliest symptoms are developmental retardations in the different sectors of personality. Changes occur in the emotional development, later the emotional manifestations become progressively impoverished, finally they give way to apathy. In those cases which survived we have found, alternating with the apathetic children, a hyper-excitable personality type. This personality type is on the lines described by Wallon as "L'Enfant Turbulent" (12). We have called this, for want of a better term, the erethitic or agitated type.

The results of this study caused us to focus our attention on the mother-child relation in all our further research on infants. We strove to examine whether in less spectacular conditions also it was truly such an all-

FIGURE 2

MORTALITY RATE OF CHILDREN IN "FOUNDLINGHOME" DURING A TWO-YEARS' OBSERVATION PEROID



important influence. Closer investigation bore out this impression. We could establish, in the course of our further research, with the help of statistical methods, that the regularity in the emergence of emotional response, and subsequently of developmental progress both physical and mental, is

predicated on adequate mother-child relations. Inappropriate mother-child relations resulted regularly either in the absence of developmental progress, emotional or otherwise, or in paradoxical responses.

This is not a surprising finding for those who have observed infants with their mothers; during the first year of life it is the mother, or her substitute, who transmits literally every experience to the infant. Consequently, barring starvation, disease or actual physical injury, no other factor is capable of so influencing the child's development in every field as its relation to its mother. Therefore this relationship becomes the central ecological factor in infant development in the course of the first year. On the other hand, development, particularly in the emotional sector, provides an extremely sensitive and reliable indicator of variations in the mother-child relationship.

A few of the further findings made by us in this respect will follow. If our first example showed the complete deprivation of emotional interchange, the following ones will present other and less striking modifications of the mother-child relation.

If, for instance, the deprivation of emotional interchange starts at a later date, in the third quarter of the first year, a condition can develop which greatly resembles the picture of depression in the adult. The psychic structure of the infant is rudimentary and can in no way be compared to that of the adult. Therefore the similarity of the symptomatology should not induce us to assume an identity of the pathological process. To stress this difference we have called the condition anaclitic (10) depression.

As the name implies, the presenting symptom is a very great increase in the manifestations of the emotions of displeasure. This goes to the point where anxiety reactions in the nature of panic can be observed. Children in this condition will scream by the hour; this may be accompanied by autonomic manifestations such as tears, heavy salivation, severe perspiration, convulsive trembling, dilation of pupils, etc.

TABLE I

NURSERY	INFLUENCE OF SEPARATION FROM MOTHER ON DEVELOPMENTAL QUOTIENT
Duration of Separation in Months	Severe Depression *Changes in Points of DQ*
Under 3	— 12.5
3 to 4	— 14
4 to 5	— 14
Over 5	— 25

At the same time development becomes arrested (see Table I). The arrest is selective: the least involved is the social sector which remains relatively advanced.

One peculiarity of this condition is that the re-establishment of favorable emotional interchange will rapidly re-establish the developmental level. However, this is only true for separations which do not last longer than three months. If the deprivation lasts longer than five months no improvement is shown. On the contrary, the developmental quotient continues its decline, though at a slower rate, and it would seem that a progressive process has been initiated (see Table II).

TABLE II

NURSERY	INFLUENCE OF SEPARATION FROM MOTHER ON DEVELOPMENTAL QUOTIENT
Duration of Separation in Months	Severe Depression *Reversibility of Decline in Points of DQ*
Under 3	+ 25
3 to 4	+ 13
4 to 5	+ 12
Over 5	— 4

We observed a completely different course of development in children who were not separated but whose mothers showed periodical mood swings (11). We observed a group of 153 mothers and their children in which 16 of the mothers showed such mood swings. Their children developed coprophagia at the end of the third quarter. Table III shows the relation between this environmental factor and the condition developed by the children.

From the emotional viewpoint these children showed strange distorted personalities. In the most extreme cases we could observe a suspicious, near-paranoid facial expression and behavior.

In another series of children whose mothers presented an infantile personality characterized by constant, rapid shifts in their attitude, showing hostility alternating with over-protectiveness towards their children literally within minutes, we found the development of the children retarded in a different manner again. There was a definite and significant retardation in the social responses and in manipulative ability. Such a retardation is the expression of a diminished capacity of these children to relate themselves to human beings or to manipulate inanimate objects. The resulting clinical picture was a specific one: objectless bodily activity became the children's outstanding occupation. We called this condition hyper-motility

(11). From a few cases which could be followed up at later stages we suspect that this may be the forerunner of the psychiatric picture which develops later and is known under the name of psychopathy in older children.

Conclusion

These few and brief statements give the essence of the findings made by us on the significance of psychosocial factors in infant development. We believe that even from these few statements it has become clear that the central psychosocial factor in the infant's life is its emotional interchange with its mother.

TABLE III

CHILD	MOTHERS		
	Depression	*No Depression*	*Total*
Fecal Play	11	5	16
No Fecal Play	5	132	137
Total	16	137	153

The particular ecological significance of this finding lies in the fact that this emotional interchange is largely governed by culturally determined mores and institutions on one hand, by social and economic conditions on the other. To give one example: marasmus was a frequent condition up to 1920 in our country, as foundling homes were still in general use. Today such conditions are difficult to find unless we look for them in countries where foundling homes are still the rule. In the United States placement in foster-homes has taken the place of foundling institutions.

Less extreme conditions, however, like anaclitic depression and the others described above can be readily found at present here too. Our social institutions do not encourage the mother to spend much time with her child—at least in the population at large. Industrial civilization tends to deprive the child in early infancy of its mother. I have recently learned that in another industrial country a financial premium has been introduced for mothers who return earlier to factory work after having delivered their child. The earlier they abandon their baby the more substantial the tax reduction they receive. We can be convinced that the consequences of these socio-economic measures will make themselves felt in a distortion of these children's psychological development, although a dozen or more years must pass before the change becomes evident.

Still less consideration is given in our social institutions and in our present-day mores to the question of how to prepare the future mother's per-

sonality for motherhood. From the influence on child development exerted by mood-swings in the mother, by the mother's infantile personality or by her neurosis, it is obvious that attempts to remedy such conditions should begin early. In two papers given recently before the Annual Convention of the American Orthopsychiatric Association[2] and at the Annual Convention of the Society for Psychosomatic Research,[3] I have stressed that preventive psychiatry should begin as early as possible, at birth at least, but preferably before delivery.

I have attempted to show in this paper that such preventive psychiatry will have to begin by applying measures which are largely of an ecological nature. These measures will have to include a re-arrangement of legislation, making it possible for mothers to stay with their children; of education to prepare our female population for motherhood; and they will have to comprise the introduction of social psychiatry to remedy in expectant mothers psychiatric conditions apt to damage their children.

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A COMMENTARY UPON SOME RECENT CHANGES IN CHILD REARING PRACTICES[1]

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As one surveys the topics which we (as professional groups) set for ourselves at meetings such as this one—and as one surveys the articles we write for each other to read—one common feature in our thinking becomes conspicuous. There appears to exist a strong desire to bring together fields of inquiry which, in the past, have largely been independent of one another. Within the field of psychology generally, and even more strikingly within the area of child development, one can note continuous efforts to break down existing boundaries. In the past we were taught to think, for instance, of the social aspects of child development as an area of study existing independently, restricted to circumscribed content and pursued by specified methods appropriate to the task. Other aspects of child development, for instance intellectual development, personality development, etc., were each treated as distinct and separate fields of study. While attempts were often made to *correlate* the phenomena which characterize each of these fields, we did not go beyond this and were content to establish the fact that a parallel can be drawn between different areas of development.

At present our emphasis is different. We stress the importance of understanding the structural and dynamic interdependence among the various developmental part-processes. We assume that physical maturation, intellectual opportunities and barriers as they exist for the child, and broader social and cultural factors all to some degree determine each other, so that no single facet of development can be described or comprehended in isolation from the rest.

If we are in earnest about achieving such an integrated approach, it will be necessary to relinquish many of the concepts and methods to which we are accustomed. The term "Psychosocial development" which occurs in the title of this symposium represents an attempt to break down the boundary between psychological and social aspects of development. Yet, as ordinarily used, this term does not suffice; it seeks to correlate phenomena rather than to describe them as one.

For the purposes of this discussion I propose to go one step further, and discuss some recent changes in child rearing practices in their larger social and cultural context. The theoretical point of view referred to above views each area of growth and development as no more than a single facet, among

[1] Delivered at the Symposium on Psychosocial Aspects of Child Development, at the 57th Convention of the American Psychological Association, Denver, Colorado, September 9, 1949.

many, of one and the same process, as though,—when we study language development, or motor development, or personality formation,—we were each peering through a different window, trying to discover what goes on within one and the same building. On the basis of such a view the manner in which children are raised, and the attitudes to which they are exposed, are part and parcel of child development itself,—not merely one of the factors which will influence it.

In this country and in modified forms in other countries we have, within a rather short period of time, witnessed a remarkable change in cultural attitudes toward specific child-rearing practices. Now as formerly it is true that the United States (more than other parts of Western civilization) is characterized by the fact that children, their health and education, possess a very high cultural value. In all likelihood this has something to do with the fact that to Americans the future is more important than past or present. Historically the United States has stood for the realization of concrete, workable, realistic fulfillment,—if not here and now, then in the foreseeable future—whereas many other cultures seem to stand primarily for a noble tradition or for more abstract ideals. The importance of children to our society has not markedly changed, but the ways in which society deals with children, the way in which parents, teachers, physicians and others behave toward children, has changed a great deal.

Ten years ago and less, authoritative public opinion subscribed to sentiments and rules which may be characterized as follows: Bodily and mental health is based on an orderly, strictly scheduled existence from early childhood onwards. Prescribed formulae are superior to breast feeding, chiefly because the ingredients are known and nutrition becomes, therefore, a controlled process. When babies or children cry without recognized legitimate cause it is best to let them cry it out. It is the responsibility of adults to teach children what is "right" and what is "wrong" in regard to meal times, sleeping hours, play interests and most other activities. The standards for "rightness" in such matters were derived from a combination of adult patterns of living and scientifically established facts about the physical growth of children. At the time, this seemed a highly rational approach. It goes with the concept of a stable, orderly and ultimately predictable universe which characterized the early decades of the 20th century. From the vantage point of the present, it is difficult to recapture the feelings and expectations on which such convictions about child-rearing practices were based. The extraordinary advances made in the natural sciences and their application to almost all facets of living,—from the building of bridges to airplane travel, and from routine innoculations to pre-cooked baby cereals,—provided for dominant groups in our culture a sense of certainty and power. It was somehow felt that—in principle at least—the external forces of nature had been overcome. The future was ours to master. It is no wonder that such a background of attitudes would lead us to expect that bigger and better children could be produced—much like automobiles or washing

machines—through specific, rather mechanical, prescribed procedures. It is well to remember that mothers who forced exactly six ounces of formula down a baby's throat exactly every four hours, nursery school teachers who handed out gold stars to the child who didn't raise his voice nor fight for a toy, and teachers who taught arithmetic by drill and drill alone performed these acts with as much or as little love and devotion for their children as is felt by any mother who feeds her baby on self-demand, and by any teacher teaching self-expression through rhythm games. Mothers dealing with their children flexibly and indulgently today, as well as the mothers who raised their children rigidly and sternly ten years ago, are and were supported by a strong sense of doing what is best for the child in accordance with expert opinion.

In the course of recent years we have lost the naive sense of mastery in regard to the world in which we live. Not only scientists but people in general have ceased to believe that technological advances will solve the problems of human existence. Quite the reverse, we are afraid of the consequences of the split atom and of other devices which release and manipulate natural forces. At the same time a generalized feeling of uncertainty emerged: even on the surface we no longer possess a stable value system. Such changes in cultural atmosphere have, of course, recurred many times in history. They characterize post-war and between-war periods, and are often described as periods of decadence or disintegration.

In one respect, however, the cultural milieu which forms the matrix in which our children presently grow and develop differs from previous times of social crisis. Scientists and everyone else now tend to regard human nature itself as the main source of threat to future security and well being. The fear of the gods, of enemies and of natural forces has been replaced by the fear of the unconscious, or of whatever it is that determines human actions. Psychoanalysis has done more than any other theory to illuminate the seemingly irrational aspects of human behavior. Occasionally it is claimed that the findings of psychoanalysis have helped to undermine the stability of our attitudes and values, and have therefore partially caused the current confusion. It is our impression that the reverse is true. In other words, the writer believes that the enormous impact which psychoanalysis has had upon popular thought, its influence on medicine, education, literature and even the moving picture, are a consequense of the loss of a stable value system rather than the other way around.[2]

We have referred to the rigid scheduling, the careful dosing of manifest

[2] Neither of the alternative views stated in the text fully reflects the intended meaning. The effect of psychoanalysis upon popular thought and practice, and its relationship to the cultural state, must be reciprocal. The formulation of psychoanalytic theory required cultural forces which demanded it; the initial resistance against analytic findings and the subsequent popularization of these findings were largely determined culturally; yet during the process the culture changed, partially by virtue of having absorbed new "facts" and new ideas from psychodynamics; the whole process being intricate and dialectic in nature.

affection and the orgies of formula prescription which constituted authoritative opinion on child rearing practices until recently. The totality of these attitudes and practices we have regarded as of a piece with a social-cultural milieu the stability and cohesiveness of which rested on a sense of technical mastery. What of the present-day philosophy of child rearing? To select a few representative items: It is now thought that it is up to us as adults to meet the needs of the younger child, rather than to expect early adaptation from him. To wit, self-demand schedules and all that goes with them. Among the needs of the young child we recognize the need for affection and for an intimate relationship with the mother as of very great importance, tending to evaluate it as more crucial than the need for good physical care. We prize self-expression, sincerity of feeling and spontaneous interest above good manners, self-restraint or intellectual accomplishment. So far so good; each culture has the right and the obligation to determine the educational goals for which to strive, and the above goals appear to adequately represent what we as a group want our children to be.

Let us look, however, at the means we adopt in trying to reach these new goals. Not so much the child-rearing authorities themselves as their interpreters (in the press, the Well Baby Clinics, the case work agencies, the Public Health Departments, etc.) have created a philosophy which by and large makes it seem as though contentment and even normal development for the child can be attained only at the cost of great self-denial on the part of the parents. The mother, especially, must subordinate her need for sleep, for recreation, for getting the housework done or for pursuing non-domestic interests at all times. Moreover, she is expected to do so with a sense of deep satisfaction and happiness. If, for a moment, we disregard all that has been learned about personality development (which led to these new methods) and consider only the vague ideological orientation of many parents and others who apply these new principles—one outstanding feature of the spectacle is that the adults are uncomfortable in many ways. Rooming-in requires the mother to take active charge of the baby at a time when previously she would have rested and been waited upon hand and foot. Self-demand, especially when the baby is breast fed or when it is believed that close contact between mother and child at feeding time is important, mean that all other activities must be adapted to the child's rhythm and makes it almost impossible to get away from home. Giving the child free scope to explore the world means endless patience and labor in cleaning up messes and in countless other ways.

If one wishes to establish a relationship between broad cultural trends and child-rearing practices, observations like those above, however correct, would be of very limited significance if they related to this one area alone. Yet even a most superficial survey of accepted attitudes and practices in altogether different areas suggests a similar trend toward making things tough for adults. For instance: after operations people used to have weeks of bed rest—currently they are made to walk about during the first few

days. The usual length of hospitalization for childbirth has dropped from ten days to six days. An infection, which in the old days would have been good for several weeks now, with the use of penicillin and other drugs, will be cleared up in a matter of days. If one breaks a leg plastic braces make it possible to walk again within a few days. If a person be too tired to work, benzedrine will fix him up almost at once. Obviously penicillin, plastic braces and the rest represent invaluable advances and constitute essential progress in human knowledge. Similarly, our new and more complete understanding of the needs of children is valuable and has become indispensable knowledge. It remains true, however, that, in our culture, it has become exceedingly difficult for adults to find legitimate channels of indulgence. Where passive needs are concerned even minimal satisfaction is difficult to attain without cultural criticism.

Such a state of affairs is of course multi-determined. If our previous speculation is correct, however, i.e. if it is true that we now tend to ascribe the responsibility for wars and other disturbing events to the "human element" rather than to outside forces, this fact may be considered as one among many which have brought on the present attitude of severity toward the needs of adults. Roughly stated our thought is that if we, collectively, assume responsibility for having created our social existence, we automatically assume moral responsibility and hence guilt for the state of affairs in which we find ourselves. In addition it follows that hopes for a better world rest with our ability to make our children more rational, more competent and more capable of maintaining an orderly existence than we have been.

Such an attitude is reasonable enough, except perhaps for the element of guilt. It is precisely this element which is reflected in some of our child-rearing practices. In the case of individuals we know that feelings of guilt are likely to lead to self-defeating action, designed more to appease the individual's anxiety than to remedy the situation which caused the guilt feeling. It is barely possible that collectively, as a culture, we are doing the same thing. It is as though our recognition of the fact that the better we learn to control events the greater our responsibility for these events implied an apologetic state of mind towards our children. As though we not only regretted that we have not done better by them, but also felt that we must "make up to them," so to speak by extra indulgence and also by punishing ourselves.

It is not suggested that individual parents, or any other persons who deal with children, are apt to consciously and clearly experience the pattern of thought suggested above. Yet, for the moment, we may assume that some such undercurrent exists in our society and motivates and/or activates some of our behavior towards children. What would it mean for the development of the children who grow up amidst such attitudes?

A real discussion of this point would require more time than is available, but the following may suggest the trend of our speculation. It is generally

true that as we deal with children, individually and collectively, we communicate to them not only our conscious intention, but also our feelings and attitudes (conscious or unconscious) which accompany these intentions. It is reasonable to assume that if our behavior towards children is in part motivated by anxiety and guilt—as has been suggested in the body of this paper—children will absorb the fact that such attitudes are maintained toward them. This in turn can be expected to affect their developing concept of the self and of the world about. As is often the case, psychopathological material may provide clues as to the meaning of behavior observations that are made with normal children. Available clinical observations can be interpreted in such a way, it is believed, as to show that in indirect ways children acquire a sense that something is owed them. Moreover, and related to this, the awareness of the adult's insecurity, anxiousness and guilt would seem to operate as a barrier towards developing the trust and confidence in the strength and the superior judgment of adults which children require if they themselves are to feel secure and confident.

In this discussion we have not attempted to evaluate or criticize the recent ideology concerning child care. Nor have we wished to assess the merits of any of the specific methods or practices which were referred to and which resulted from a new philosophy concerning children. In fact, it may not be amiss to mention that in large measure we consider the new pediatric and educational practices as the practical application of valid and useful insights into the nature of personality development.

Rather, we wish to call to your attention the manner in which many of the facts provided by psychoanalysis, child psychology, etc. have been interpreted and applied. It is thought that the application of our new insights has often been made in such a way as to make many of the recommended child-rearing practices the vehicle of our group anxieties and collective guilt. We do not regard this as a logical necessity. Instead we should like to consider it as a comprehensible social-psychological phenomenon which may perhaps be modified and minimized through conscious recognition. Cultural emphasis on the psychological implications of child-rearing practices is likely to continue, and it is desirable that it should. However, a modification in some of our accompanying attitudes is also thought desirable. Increasing awareness of the less rational elements in our behavior—of unconscious motivations and of the intrinsic connection between feelings, beliefs and actions—is useful to the extent to which it enables us to better control these elements and to master ourselves as we have mastered the physical world. It would be both ironic and tragic if, in the very act of removing some of the frustrations and limitations to optimal psychic development, we ran counter to the very nature of our understanding about the emotional needs of children by unnecessarily burdening them with our historically and socially understandable terrors and uncertainties.

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NEWS NOTES

Susan Isaacs Memorial Fund. The University of London Institute of Education has recently launched a memorial fund to endow a research fellowship in the name of the late Susan Isaacs, to be concerned with the psychology and education of young children. Representatives from other countries have been invited to belong to an executive committee for the purpose of making the fund representative of other countries as well as England. Miss D. E. M. Gardner is taking Miss Isaacs' place as head of the Department of Child Development.

Hutterite Research. A preventative approach to mental health is the basis of a study of a "well adjusted" culture, which is being financed by a grant of $19,364 from the National Institute of Mental Health of the U.S. Public Health Service. The project, entitled "Cultural and Psychiatric Factors in the Mental Health of the Hutterites" will be administered by Wayne University in Detroit, under the direction of Assistant Professor Joseph W. Eaton of the Department of Sociology and Anthropology. Associate Professor James Clark Moloney, M.D., of the Wayne University College of Medicine will serve as psychiatric consultant.

Special attention will be given to child-rearing practices, the adolescent period and the techniques of socializing the young Hutterite to live up to what is expected from him.

Helen Putnam Fellowship for Advanced Research. Radcliffe College recently announced that applications for the Helen Putnam Fellowship for Advanced Research are open to postdoctoral women scholars in the field of genetics or of mental health broadly defined to include such fields as clinical psychology and child development. The stipend will be $2800 a year. Application blanks may be obtained from the Secretary of the Graduate School, Radcliffe College, Cambridge, Massachusetts.

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